

**METHOD AND DEVICE FOR TRANSPORTING A SHEET****BENEFIT CLAIMS**

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**FIELD OF THE INVENTION**

The present invention relates in general to transporting a sheet, wherein the sheet is  
10 successively transported in two different directions.

The present invention relates in particular to transporting a sheet, wherein the sheet is  
successively transported by a first carrier and a second carrier, wherein the carriers are movable  
in different directions, and wherein, at a certain moment, the sheet is conveyed from the first  
carrier to the second carrier.

**BACKGROUND OF THE INVENTION**

15 According to the state of the art, a method for transporting a sheet comprises the  
following steps:

- moving the sheet in a first direction by applying a first carrier which is movable in the  
first direction and which is capable of retaining the sheet by means of a surface force, wherein a  
20 retainer area of the sheet is retained by the first carrier and a conveyance area of the sheet  
projects with respect to the first carrier;

- conveying the sheet from the first carrier to a second carrier which is movable in a  
second direction and which is capable of retaining the sheet by means of a surface force, wherein  
the sheet is put in a conveyance position by the first carrier, in which position the complete  
25 conveyance area overlaps the second carrier; and

- moving the sheet in the second direction by applying the second carrier.

The known method is applied as part of a manufacturing process of a so-called crosslaid  
fiber web, for example. Such a fiber web comprises two or more layers of fibers, wherein the  
directions of the fibers in the various layers are at an angle with respect to each other, for  
30 example an angle of 90°.

In the following, as an example, a manufacturing process of a crosslaid fiber web is described, wherein the fibers of the various layers of the crosslaid fiber web are at an angle of 90° with respect to each other. For the purpose of the manufacturing process of the crosslaid fiber web, a device having a first endless conveyor belt and a second endless conveyor belt is applied.

5 The second conveyor belt adjoins a side of the first conveyor belt in a close-fitting fashion, and extends at an angle of 90° with respect to the first conveyor belt.

For the purpose of manufacturing the crosslaid fiber web, a longitudinal fiber web is positioned on both conveyor belts. A longitudinal fiber web is a fiber web in which the fibers extend in one direction, in particular a direction substantially parallel to side edges of the fiber web. The longitudinal fiber webs are reeled off of a storage reel or the like, and are retained by  
10 the conveyor belts. Retaining of the longitudinal fiber webs may take place in various manners. According to a usual possibility, a suction force is applied, wherein an underpressure is prevailing at a backside of a supporting surface of the conveyor belts, while the conveyor belt is provided with a plurality of passage openings.

15 At the first conveyor belt, a knife is arranged, which extends at an angle of 90° with respect to the first conveyor belt. When the knife is applied, segments are continuously cut off of the longitudinal fiber web on the first conveyor belt, which are subsequently transported further by the first conveyor belt. When the cut-off segments are at a position where the second conveyor belt adjoins the first conveyor belt, which position is indicated as conveyance position,  
20 the first conveyor belt is stopped and the segments are conveyed to the second conveyor belt. In this way, the segments end up on the longitudinal fiber web which is located on the second conveyor belt. It will be clear that the movements of the conveyor belts are adapted to each other in such a way that successive segments end up on the longitudinal fiber web in an adjoining fashion, so that a continuous crosslaid fiber web is obtained.

25 The crosslaid fiber web is ready when the longitudinal fiber web and the segments are connected to each other. Fixing the segments on the longitudinal fiber web can be realized in various manners, for example by means of laminating.

For the purpose of conveying the segments from the first conveyor belt to the second conveyor belt, the segments are positioned on the first conveyor belt in such a way that only a  
30 retainer area of the segments rests on the first conveyor belt, and that a conveyance area of the

segments projects with respect to the first conveyor belt. More in particular, the conveyance area of the segments projects with respect to the side of the first conveyor belt which is adjoined by the second conveyor belt. In this way, it is achieved that the conveyance area of the segments is located on the second conveyor belt when the segments are in the conveyance position. As soon  
5 as the suction force between the segments and the first conveyor belt is released, and the second conveyor belt is activated to retain the segments, this second conveyor belt is capable of pulling off the segments of the first conveyor belt in a simple manner and directly transporting the segments further. It is possible that a third conveyor belt or a roller is provided, which serves for letting the conveyance of the segments from the first conveyor belt to the second conveyor belt  
10 take place in a good and secure manner by pressing the segments against the longitudinal fiber web.

It has appeared in practice that a situation may occur in which a crosslaid fiber web which is obtained by means of the manufacturing process as described above shows irregularities. In this respect, a cause appears to be the fact that the conveyance area of the segments does not  
15 always end up on the longitudinal fiber web on the second conveyor belt in a proper way. For example, a small area at the edge of the conveyance area may be curled, as a result of which this small area is folded double when the segment is connected to the longitudinal fiber web.

### **SUMMARY OF THE INVENTION**

It is an objective of the present invention to provide a method for transporting a cut-off  
20 segment, wherein measures are taken for guaranteeing that the conveyance of the segment from the first conveyor belt to the second conveyor belt takes place in a proper fashion, i.e. without curling or folding of a portion of the edge of the segment taking place.

The objective is in general achieved by a method for transporting a sheet, comprising the following steps:

- 25 - moving the sheet in a first direction by applying a first carrier which is movable in the first direction and which is capable of retaining the sheet by means of a surface force, wherein a retainer area of the sheet is retained by the first carrier and a conveyance area of the sheet projects with respect to the first carrier;
- conveying the sheet from the first carrier to a second carrier which is movable in a  
30 second direction and which is capable of retaining the sheet by means of a surface force, wherein

the sheet is put in a conveyance position by the first carrier, in which position the complete conveyance area overlaps the second carrier; and

- moving the sheet in the second direction by applying the second carrier;

wherein, during the movement of the sheet in the first direction, guidance of a guidance area of the sheet, which comprises at least a portion of the conveyance area of the sheet, takes place by applying guiding means, which guidance is cancelled when the sheet has reached the conveyance position.

According to an important aspect of the present invention, when the method according to the present invention is applied for manufacturing a crosslaid fiber web, a guidance area of the segments is guided when the segments are taken to the conveyance position by the first conveyor belt. The guidance area comprises at least a portion of the conveyance area of the segments, which projects with respect to the first conveyor belt. When the segments have reached the conveyance position, the guidance is cancelled, so that the segments may be conveyed to the second conveyor belt. By guiding at least a portion of the conveyance area of the segments, it is achieved that this area does not curl or fold, so that the segments may be laid on the longitudinal fiber web on the second conveyor belt in a completely planar condition. An advantageous consequence is that the crosslaid fiber web which is formed on the basis of the longitudinal fiber web and the segments has a regular structure, and all of the crosslaid fiber web is useful for further applications.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

The present invention will now be explained in greater detail on the basis of the following description of the invention with reference to the figures, in which equal reference signs indicate equal or similar parts, and in which:

**figure 1** is a side view of a longitudinal section in a first direction of a device for manufacturing a crosslaid fiber web according to a preferred embodiment of the present invention;

**figure 2** is a side view of a longitudinal section in a second direction of the device shown in **figure 1**;

**figure 3** is a top view of a portion of the device shown in **figure 1**;

**figure 4** is a diagrammatical top view of a portion of a guiding belt of the device shown in **figure 1** and a portion of a cut-off segment of a longitudinal fiber web; and

**figure 5** shows an alternative of detail **A** in **figure 2**.

### **DETAILED DESCRIPTION OF THE INVENTION**

**Figures 1-3** show various views of a device **1** for manufacturing a crosslaid fiber web **2** according to a preferred embodiment of the present invention.

The crosslaid fiber web **2** is manufactured on the basis of two longitudinal fiber webs **3, 4**. For sake of clarity, the longitudinal fiber webs **3, 4** are only shown in **figures 1** and **2**. The device **1** comprises a first conveyor belt **10** for transporting a first longitudinal fiber web **3** in a first direction and a second conveyor belt **20** for transporting a second longitudinal fiber web **4** in a second direction. In the shown example, the conveyor belts **10, 20** extend at an angle of 90° with respect to each other, which does not alter the fact that the conveyor belts **10, 20** may be oriented at another angle with respect to each other. The second conveyor belt **20** adjoins a side of the first conveyor belt **10**.

Usually, the longitudinal fiber webs **3, 4** are positioned on reels **31, 41**, which are rotated during operation of the device **1**, wherein the longitudinal fiber webs **3, 4** are reeled off of the reels **31, 41**. For the purpose of receiving and rotating the reels **31, 41**, the device **1** comprises unreeling units **32, 42**. Furthermore, the device **1** comprises guiding devices **33, 43** for guiding the longitudinal fiber webs **3, 4** in the direction of the conveyor belts **10, 20**.

The device **1** comprises a cutting unit **50** having a knife **51** for cutting off segments **5** of the first longitudinal fiber web **3** which is located on the first conveyor belt **10**. The first longitudinal fiber web **3** is moved under the knife **51**, while the knife **51** is regularly activated to cut off the segments **5** of the first longitudinal fiber web **3**. As an illustration, in **figure 3**, two segments **5** are shown, wherein the segments **5** are depicted as being transparent, so that underlying portions of the device **1** are visible.

According to an important aspect of the present invention, the device **1** comprises a guiding belt **60**, which extends parallel with respect to the first conveyor belt **10**, along the side of the first conveyor belt **10** which is adjoined by the second conveyor belt **20**. In **figure 4**, a portion of the guiding belt **60** is shown in more detail. Also, in **figure 4**, a portion of a segment **5** is shown, which, for sake of clarity, is depicted as being transparent. The guiding belt **60**

comprises a number of portions **61** protruding in a sideward direction, at the location of which the guiding belt **60** is broadened. In **figures 3 and 4**, a relatively narrow part of the guiding belt **60** is indicated by means of the reference numeral **62**.

The device **1** comprises a third conveyor belt **70**, which extends above a portion of the second conveyor belt **20**, and which is movable in the second direction. For sake of clarity, the third conveyor belt **70** is only shown in **figure 2**. Furthermore, the device **1** comprises a laminating unit **80** for interconnecting the segments **5** and the second longitudinal fiber web **4**.

In the following, a description will be given of the way in which the manufacturing process of a crosslaid fiber web **2** takes place when the device **1** according to the present invention is used.

The first longitudinal fiber web **3** is laid down on the first conveyor belt **10** in such a way that only a retainer area **34** of the first longitudinal fiber web **3** is supported by the first conveyor belt **10**, and that a conveyance area **35** of the first longitudinal fiber web **3** projects with respect to the side of the first conveyor belt **10**. The same goes for the segments **5** which are cut off of the first longitudinal fiber web **3**.

The first longitudinal fiber web **3** is retained by the first conveyor belt **10** at the location of the retainer area **34**. In the shown example, the first conveyor belt **10** comprises a plurality of openings **11**, so that the first conveyor belt **10** is capable of exerting a suction force on the first longitudinal fiber web **3** when an underpressure is prevailing at an uncovered side of the openings **11**. In a similar manner, the segments **5** are retained by the first conveyor belt **10** at the location of the retainer area **34**.

The first longitudinal fiber web **3** is moved to the cutting unit **50** by the first conveyor belt **10**. At the location of the cutting unit **50**, the knife **51** is continually used for cutting off a segment **5** of the first longitudinal fiber web **3**.

Starting from the cutting unit **50**, when the cut-off segments **5** are transported further by the first conveyor belt **10**, at least a portion of the conveyance area **35** is supported by the guiding belt **60**. In particular, a portion **36** of the conveyance area **35** of the segments **5**, which is a front portion **36** in a direction of movement of the first conveyor belt **10**, is completely supported by a protruding part **61** of the guiding belt **60**. The guiding belt **60** is adapted to retaining the conveyance area **35** of the segments **5**, for example on the basis of static electricity.

During a movement of a cut-off segment **5** from the cutting unit **50** to a conveyance region **12** in which the segment **5** is in line with the second conveyor belt **20**, the guiding belt **60** moves at a speed which is substantially equal to the speed of the first conveyor belt **10**, so that the conveyance area **35** of the segment **5** remains supported in the above-described way. When  
5 the segment **5** has reached the conveyance region **12**, the first conveyor belt **10** is stopped and the segment **5** may be conveyed to the second conveyor belt **20**.

While the segment **5** is still retained by the first conveyor belt **10**, the guiding belt **60** moves further, so that the protruding part **61** of the guiding belt **60** moves from under the conveyance area **35** of the segment **5**, wherein the front portion **36** originally supported by the  
10 protruding part **61** of the guiding belt **60** ends up on the second longitudinal fiber web **4** on the second conveyor belt **20**. Subsequently, the suction force exerted by the first conveyor belt **10** on the segment **5** is released, so that the segment **5** is no longer retained by the first conveyor belt **10**, and is capable of moving along with the second conveyor belt **20**. In the shown example, the second conveyor belt **20** retains the segment **5** in a similar manner as the first conveyor belt **10**  
15 does.

During the conveyance of the segment **5** from the first conveyor belt **10** to the second conveyor belt **20**, the segment **5** is guided by the third conveyor belt **70**, at an upper side. In order to be capable of pressing the segment **5** on the second longitudinal fiber web **4**, the second conveyor belt **20** and the third conveyor belt **70** are moved with respect to each other, wherein  
20 the second conveyor belt **20** and the third conveyor belt **70** move toward each other, until just a small distance is present between said conveyor belts **20**, **70**. It is possible that only the third conveyor belt **70** is moved, but it is also possible that both the third conveyor belt **70** and the second conveyor belt **20** are moved, for example. A larger distance between the second conveyor belt **20** and the third conveyor belt **70** is desirable when the segment **5** is located in the  
25 conveyance region **12** and is conveyed to the second conveyor belt **20**, in order to prevent a situation in which the conveyance of the segment **5** from the first conveyor belt **10** to the second conveyor belt **20** is hindered.

The entirety of the second longitudinal fiber web **4** and the segments **5** laid down thereon is moved further by the second conveyor belt **20**, after which said entirety is made to be a  
30 crosslaid fiber web **2** in the laminating unit **80**, because of the fact that the second longitudinal

fiber web **4** and the segments **5** laid down thereon are definitively connected to each other in the laminating unit **80**. The crosslaid fiber web **2** is moved out of the laminating unit **80**, toward a reeling unit **56**, via a guiding device **55**. In the reeling unit **56**, a roller **57** is present, wherein the crosslaid fiber web **2** is reeled on the roller **57**. The roller **57** and the crosslaid fiber web **2** reeled thereon is an end product which is obtained on the basis of the reel **31** having the first longitudinal fiber web **3** reeled thereon and the reel **41** having the second longitudinal fiber web **4** reeled thereon, and which finds many applications.

The guiding belt **60** plays an important role in obtaining a situation in which the conveyance of the segments **5** from the first conveyor belt **10** to the second conveyor belt **20** takes place in a proper manner. By the application of the guiding belt **60**, it is guaranteed that the segments **5** end up on the second longitudinal fiber web **4** in a completely planar fashion. Without the presence of the guiding belt **60**, there is an actual chance that a portion of the conveyance area **35**, in particular the front portion **36** of the conveyance area **35** curls, and that the segments **5** are not placed on the second longitudinal fiber web **4** in a completely outstretched condition. In stead, the curled portion of the segments **5** can be definitively folded when said portion is firmly pressed on the underlying second longitudinal fiber web **4** and is connected to this longitudinal fiber web **4** in the laminating unit **80**.

In order to guarantee that the guiding belt **60** is not capable of hindering the conveyance from the first conveyor belt **10** to the second conveyor belt **20**, it is important that a distance between two successive protruding parts **61** of the guiding belt **60** is larger than a dimension of the segments **5** in the first direction.

Advantageously, the guiding belt **60** is adapted to guaranteeing that the conveyance area **35** and the retainer area **34** of the segments **5** extend at a substantially equal level. In view of this, the guiding belt **60** is arranged with respect to the first conveyor belt **10** in such a way that a supporting surface of the guiding belt **60** and a supporting surface of the first conveyor belt **10** are substantially at the same level.

Within the scope of the present invention, various possibilities for the practical realization of the various components of the device **1** exist.

The first conveyor belt **10**, which serves for supporting and transporting the first longitudinal fiber web **3** and the cut-off segments **5**, may be adapted to retaining the first



longitudinal fiber web **3** and the segments **5** by means of a suction force, as has already been described in the foregoing. That does not alter the fact that the first conveyor belt **10** may be adapted to retaining the first longitudinal fiber web **3** and the segments **5** in another suitable way, wherein, in general, the first conveyor belt **10** is adapted to exerting an attractive force on at least a portion of an under surface of the first longitudinal fiber web **3** and the segments **5**. In a similar manner, the second conveyor belt **20**, which serves for supporting the second longitudinal fiber web **4** and the segments **5** laid down thereon, may be adapted to retaining the longitudinal fiber web **4** and the segments **5** laid down thereon in another way than by means of a suction force.

At least one of the first conveyor belt **10** and the second conveyor belt **20** can be divided in two or more parts, wherein ends of the parts adjoin each other. For example, the first conveyor belt **10** may comprise two parts, wherein sides of the parts which are adjoining each other are present at the location of the cutting unit **50**. An advantage of the division of the conveyor belts **10**, **20** is that the parts may be moved at different speeds.

The guiding belt **60** may be realized as a steel strip which is capable of retaining at least the front portion **36** of the conveyance area **35** of the segments **5** on the basis of static electricity. It is also possible that the guiding belt **60** is realized as a textile strip having standing hairs, for example. In stead of a belt **60**, it is also possible to apply movably arranged suction cups, for example, for retaining at least a portion of the conveyance area **35** of the segments **5**.

It is not necessary that the device **1** comprises a laminating unit **80** for interconnecting the second longitudinal fiber web **4** and the segments **5**. For example, it is also possible that an upper surface of the second longitudinal fiber web **4** is provided with a self-adhesive layer of glue. In that case, a connection between the segments **5** and the second longitudinal fiber web **4** is established as soon as the segments **5** contact the second longitudinal fiber web **4**. In such case, it is not necessary to apply a third conveyor belt **70** for pressing the segments **5** against the second longitudinal fiber web **4**. In stead, it should be sufficient to apply a roller or the like.

Furthermore, it is not necessary that the segments **5** are placed from the first conveyor belt **10** directly on the second longitudinal fiber web **4**. For example, it is also possible that the segments **5** end up directly on the second conveyor belt **20**, and that the second longitudinal fiber web **4** is subsequently laid down on the segments **5**, from an upper side.

It will be clear to a person skilled in the art that the scope of the present invention is not limited to the examples discussed above, but that several amendments and modifications thereof are possible without deviating from the scope of the invention as defined in the appended claims.

In the foregoing, the invention is described in the context of manufacturing a crosslaid  
5 fiber web **2**. That does not alter the fact that the invention is also applicable in other fields. In any case, the invention offers a useful solution in situations in which a sheet needs to be successively moved by two different carriers, wherein, for the purpose of the conveyance from a first of the carriers to a second of the carriers, the sheet projects with respect to the first of the carriers, and wherein the projecting portion of the sheet curls in an upward or in a downward  
10 direction, as a result of which the sheet does not end up on the second of the carriers in a completely outstretched condition.

According to the present invention, guiding means such as a guiding belt **60** are provided for guiding at least a portion **36** of the projecting conveyance area **35** of the sheet during the time that the sheet is transported to the conveyance region **12** by the first conveyor belt **10**. The  
15 guiding function of the guiding means may be realized by arranging the guiding means with respect to the first conveyor belt **10** in such a way that these means are capable of supporting said portion **36** of the conveyance area **35** of the sheet. Within the scope of the present invention, alternatives of the guiding means are feasible, for example guiding means which are adapted to retaining the portion **36** of the conveyance area **35**, from an upper side.

In the foregoing, a device **1** for manufacturing a crosslaid fiber web **2** has been described,  
20 which comprises a first conveyor belt **10** and a second conveyor belt **20**. The conveyor belts **10**, **20** are oriented in two different directions, wherein the second conveyor belt **20** adjoins a side of the first conveyor belt **10**. During operation of the device **1**, the first conveyor belt **10** transports longitudinal fiber web segments **5**, which are conveyed to the second conveyor belt **20** in a  
25 conveyance region **12**.

During transportation by the first conveyor belt **10**, a conveyance area **35** of the longitudinal fiber web segments **5** projects with respect to the side of the first conveyor belt **10**. The device comprises a guiding belt **60** for supporting a portion **36** of this conveyance area **35**, in order to guarantee that, in the conveyance region **12**, the longitudinal fiber web segments **5** may  
30 be conveyed to the second conveyor belt **20** in a completely outstretched fashion.

According to an important aspect of the present invention, the guiding device 33 for guiding the first longitudinal fiber web 3 at a position between the reel 31 and the first conveyor belt 10 comprises a movably arranged guiding member 37 having two rotatably arranged guiding rollers 38, as well as a frame 39 for supporting and guiding the guiding member 37. In the  
5 shown example, the guiding member 37 is movable in a horizontal direction.

The guiding device 33 also comprises controlling means (not shown) for determining and setting a position of the guiding member 37 with respect to the frame 39. In the process, a basic assumption is that the tension in the first longitudinal fiber web 3 needs to remain at a certain minimum level. On the one hand, the controlling means are adapted to measuring the tension in  
10 the first longitudinal fiber web 3, and, on the other hand, to controlling moving means (not shown) which are adapted to realizing a movement of the guiding member 37 with respect to the frame 39, on the basis of a comparison of a measured value of the tension and a required minimum value of the tension. In a practical embodiment, the moving means comprise an electric motor, for example.

Due to the fact that the guiding member 37 of the guiding device 33 is movable in the horizontal direction, it is possible to compensate for possible differences of the speed of the first longitudinal fiber web 3 in the vicinity of the reel 31 and on the first conveyor belt 10. By keeping the tension in the first longitudinal fiber web 3 at a certain level, sagging of the first longitudinal fiber web 3 is prevented, which happens in the path between the reel 31 and the  
20 guiding device 33, for example, when the guiding member 37 would have a fixed position and when the speed of the first longitudinal fiber web 3 would be higher at the reel 31 than on the first conveyor belt 10. Also, by the application of the guiding device 33, it is prevented that reeling off of the first longitudinal fiber web 3 of the reel 31 needs to stop when a segment 5 is cut off of the first longitudinal fiber web 3 on the first conveyor belt 10 and the first longitudinal  
25 fiber web 3 consequently does not move, and needs to start again when, for the purpose of cutting off a following segment 5, the first longitudinal fiber web 3 moves further on the first conveyor belt 10 over the distance of a segment 5. In stead, the reel 31 may rotate continuously at a more or less constant speed.

An important feature of the shown guiding device 33 is that this device 33 contacts  
30 exclusively one side of the first longitudinal fiber web 3, while another side of the first

longitudinal fiber web **3** remains free from contact. The first longitudinal fiber web **3** forms a loop around the guiding member **37**, as it were, wherein both guiding rollers **38** contact the first longitudinal fiber web **3** at an inner side of the loop.

Everything that has been noted in the foregoing with respect to the construction of the guiding device **33** for guiding the first longitudinal fiber web **3** at a position between the reel **31** and the first conveyor belt **10** is in a similar manner applicable to the other guiding devices **43**, **55** of the device **1**, i.e. the guiding device **43** for guiding the second longitudinal fiber web **4** at a position between the reel **41** and the second conveyor belt **20** and the guiding device **55** for guiding the crosslaid fiber web **2** at a position between the second conveyor belt **20** and the roller **57** of the reeling unit **56**.

As a result of the fact that one side of the second longitudinal fiber web **4** remains free from contact, it is possible to provide the second longitudinal fiber web **4** with a layer of glue, for example, in the vicinity of the reel **41**. Applying glue to the second longitudinal fiber web **4** is an advantageous option, because as a result of doing so, the laminating unit **80** for connecting cut-off segments **5** of the first longitudinal fiber web **3** and the second longitudinal fiber web **4** may be omitted. The fact that the guiding device **43** enables the reel **41** to rotate at a more or less constant speed leads to a situation in which it is possible to evenly apply the glue to the second longitudinal fiber web **4**.

In **figure 5**, a gluing device **85** is diagrammatically shown, which is arranged near the unreeling unit **42**. The gluing device **85** comprises a glue roller **86** for guiding the second longitudinal fiber web **4** and a glue spray **87** for applying the glue on this longitudinal fiber web **4**. Preferably, a central shaft of the glue roller **86** is connected to a frame **45** of the unreeling unit **42**, as shown in **figure 5**. The second longitudinal fiber web **4** is led through between the glue roller **86** and the glue spray **87**, so that it is supported at one side by the glue roller **86** during a movement of the reel **41**, and it is provided with glue at another side. It is evident that the glue spray **87** is designed such that at least a substantial portion of the width of the second longitudinal fiber web **4** is covered by the glue spray **87**. In an alternative embodiment, the glue spray **87** is movably arranged.

When the segments **5** of the first longitudinal fiber web **3** are connected to the second longitudinal fiber web **4** by means of glue, a crosslaid fiber web **2** having better mechanical

characteristics than when the segments **5** of the first longitudinal fiber web **3** are connected to the second longitudinal fiber web **4** by means of laminating is obtained. In a laminating process, thermoplastic glues are applied, while in a gluing process, reactive glues are applied, which are capable of establishing a stronger connection and which have a higher temperature resistance.

Moreover, the application of glue offers better possibilities for adapting the characteristics of the crosslaid fiber web **2** to be manufactured to the final use thereof.

The application of the guiding device **33** having the movably arranged guiding member **37** is not limited to guiding longitudinal fiber webs **3**, **4** or crosslaid fiber webs **2**. Dependent of the application, the guiding member **37** may be movable in another direction than the horizontal direction, for example in a vertical direction. However, in such a case, measures need to be taken for eliminating the influence of the weight of the guiding member **37** on the tension in the web to be guided.

It is not necessary that the guiding member **37** of the guiding device **33** comprises two guiding rollers **38**; the number of guiding rollers **38** may also be one or more than two.

When a device according to the present invention having a laminating unit **80** for interconnecting the segments **5** and the second longitudinal fiber web **4** as shown in **figure 2** is applied, it is advantageous when the upper surface of the second longitudinal fiber web **4** is activated in a manner known per se to retain the segments **5** by means of static electricity. Because it is realized in this way that the segments **5** are retained by the second longitudinal fiber web **4**, there is no danger of the segments **5** falling off of the second longitudinal fiber web **4** as soon as the second longitudinal fiber web **4** and the segments **5** present thereon move along the guiding device **55**. Therefore, in such a case, it is possible to have an embodiment of the device in which the laminating unit **80** is positioned between the guiding device **55** and the reeling unit **56**. Due to the action of the guiding device **55** having the movably arranged guiding member, it is possible that the entirety of the second longitudinal fiber web **4** and segments **5** moves between the guiding device **55** and the reeling unit **56** at a more or less constant speed. Hence, the laminating process may be performed in a continuous and even fashion. Such a laminating process is preferred with respect to a process which needs to take place in a discontinuous fashion.

It is not necessary that the segments 5 are retained by the second longitudinal fiber web 4 on the basis of static electricity; within the scope of the present invention, any surface force may be applied.